UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,721	07/24/2001	Song Chen	9824-067-999	5513

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EXAMINER
LEE, JOHN J

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	**Applicant(s)**
Office Action Summary	09/912,721	CHEN ET AL.
	Examiner	**Art Unit**	
	JOHN J LEE	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 March 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
     closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-17,19,20,22-27,31-37,39-45 and 47* is/are rejected.

7)☒ Claim(s) *9,18,21,28-30,38 and 46* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Response to Arguments/Amendment

1.   Applicant's arguments/amendments received on March 28, 2005 have been carefully

considered but they are not persuasive because the teaching of all the cited reference reads on

all the rejected claims as set forth in the pervious rejection. Therefore, the finality of this

Office Action is deemed proper.

Contrary to the assertions at pages 16 - 18 of the Arguments, claims 1, 23, 24, and 31,

are not patentable.

During examination, the USPTO must give claims their broadest reasonable

interpretation.

Re claims 1, 23, 24, and 31: Applicant argues that the combination of Bouis et al. (US

Patent number 6,741,608) and Merritt et al. (6,192,250) do not teach the claimed invention

"relating communications protocols include TDMA and CDMA". However, this limitation is

not in the independent claims. Also, the Examiner is of the opinion that Bouis teaches

communicating through the telephone network or Internet in Fig. 1 and column 4, lines 13 -

49. This is well known art the telephone network has been used CDMA or TDMA

communication protocol currently. Furthermore, Merritt teaches AT&T network relates to

communication protocol such that TDMA. It would have been obvious to one having

ordinary skill in the art at the time the invention was made to modify the Bouis system as

taught by Merritt, provide the motivation to improve communication reliability in

communication system. Moreover, the Applicant argues that the combination of Bouis and

Merritt do not teach the claimed invention "a plurality of application specific instruction set

processors". However, The Examiner respectfully disagrees with Applicant's assertion. Contrary to Applicant's assertion, Bouis teaches the controller determines and places the modules (the application specific instruction set processors) into the series in an order that optimizes conversion (Fig. 4, 6 and column 5, lines 54 – column 7, lines 3), regarding the claimed limitation. Applicant also argues that failure disclosure the limitation "a signal module can execute a subset of a set of functions" by combination of teaching of Bouis and Merritt. However, the Examiner respectfully disagrees with Applicant's assertion. Contrary to Applicant's assertion, Bouis teaches for each of the paths, the controller determines a path system load by adding and performing each of the modules system loads together, and the controller compares the path system loads to determine which path will produce the least amount of the load on the system and then each module in determined path performs a subset of function (see column 6, lines 23 – column 7, lines 10 and Fig. 4, 6). Regarding the claimed invention. Furthermore, Merritt teaches that there are plurality processors, a control processor determines one of the conversion processors and executing for the application programs (Fig. 2, 4 and column 4, lines 47 – column 5, lines 32), it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Bouis system as taught by Merritt, provide the motivation to achieve an efficient processing for optimize work management by the partitioning between network processors.

Applicant's attention is directed to the rejection below for the reasons as to why this limitation is not patentable.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
manner in which the invention was made.

3.   **Claims 1-8, 10-17, 19, 20, 22-27, 31-37, 39-45, and 47** are rejected under 35

U.S.C. 103(a) as being unpatentable over Bouis et al. (US Patent number 6,741,608) in

view of Merritt et al. (US Patent number 6,192,250).

Regarding **claims 1 and 31**, Bouis discloses that a wireless communication

system for hosting a plurality of processes (420, 430, 440 in Fig. 4), each process in said

plurality of processes executed in accordance with a optimizes conversion, the optimizes

conversion including a set of functions (Fig. 4, abstract, and column 3, lines 13 – 46).

Bouis teaches that a plurality of application specific instruction (controller determines

and places the modules into the series in an order) set processors (ASISP) (420, 430, 440

in Fig. 4), each ASISP capable of executing a subset of said set of functions included in

said optimizes conversion (column 2, lines 12 – column 3, lines 12 and Fig. 4, 6, where

teaches the transcoding controller selects and places the modules into the series in an

order that optimizes conversion (according to speed, cost, fidelity, load or by any other

desired measure)). Bouis teaches that a scheduler (transcoding controller (410) in Fig. 4)

connected to said plurality of ASISPs for scheduling said plurality of ASISPs in

accordance with a time-slicing algorithm (optimal serious order) so that each process in

said plurality of processes is supported by said wireless communication system (column 6, lines 23 – column 7, lines 3, Fig. 4, 6, and column 2, lines 12 – column 3, lines 12, where teaches the transcoding controller compares the path system loads to determine which path will produce the least amount of load on the system and capable of using optimal series of streaming conversion modules concurrently to convert positions of the data stream from source format to destination format). Bouis does not exactly disclose the limitation "the wireless communication system". However, this would have been obvious to one having ordinary skill in the art at the time of applicant's invention, because the Bouis teaches the telephone communications over the telephone network (see column 4, lines 30 – 40), more specifically, the telephone communication network uses GSM system as like wireless mobile communication system and the principle work is same in wire and wireless communication system.

However, Bouis does not specifically disclose the limitation "the wireless communication system has a plurality of processors executed in accordance with a communication protocol". However, Merritt discloses the limitation "the wireless communication system has a plurality of processors executed in accordance with a communication protocol" (Fig. 2, 3 and column 4, lines 47 – column 5, lines 65, where teaches a communication system (AT&T network or AT&T communication system (wireless or wireline)) has a plurality of processors (27s in Fig. 2) for executing in a accordance with communication protocol). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Bouis system as

taught by Merritt, provide the motivation to achieve enhancing communication

adaptability in communication network.

Regarding **claims 2 and 32**, Bouis and Merritt disclose all the limitation, as

discussed in claim 1. Furthermore, Bouis further discloses that each said ASISP further

comprises an input register for receiving an input program and state associated with a

process in said plurality of processes (column 1, lines 35 – 65, Fig. 4, and column 2, lines

13 – 46), each instruction in said input program being part of a limited purpose

instruction set that supports said subset of functions included in said communication

protocol (column 2, lines 13 – column 3, lines 21 and Fig. 4). Bouis teaches that an

output register for storing a value that indicates a state of said process after execution of

said input program (column 2, lines 13 – column 3, lines 46 and Fig. 4).

Regarding **claims 3 and 33**, Bouis and Merritt disclose all the limitation, as

discussed in claim 1. Furthermore, Bouis further discloses that the input program is

associated with a first process selected from said plurality of processes (column 2, lines

13 – column 3, lines 46 and Fig. 4). Bouis teaches that said time-slicing algorithm

includes a step of allocating a selected ASISP in said plurality of ASISPs to said input

program for a predetermined period of time (column 6, lines 23 – column 7, lines 3, Fig.

4, 6, and column 2, lines 12 – column 3, lines 12).

Regarding **claim 4**, Bouis discloses that the input program is not interrupted by

said scheduler during said predetermined period of time (Fig. 4, 5 and column 7, lines 10

– 64).

Regarding **claims 5 and 34**, Bouis discloses that execution of said input program is completed during said predetermined period of time (Fig. 4, 5 and column 6, lines 23 – column 7, lines 24).

Regarding **claims 6 and 35**, Bouis and Merritt disclose all the limitation, as discussed in claim 1. Furthermore, Bouis further discloses that the scheduler further includes a synchronization mechanism for synchronizing said plurality of ASISPs, the synchronization mechanism capable of reallocating an ASISP in said plurality of ASISPs from a first input program that is associated with a first process to a second input program that is associated with a second process (column 6, lines 23 – column 7, lines 3, Fig. 4, 6, and column 2, lines 12 – column 3, lines 12).

Regarding **claims 7 and 36**, Bouis discloses that the first process is a first echo and said second process is a second echo (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claims 8 and 37**, Bouis and Merritt disclose all the limitation, as discussed in claim 1. Furthermore, Bouis further discloses that the first process is each echo associated with a first mobile and said second process is each echo associated with a second mobile (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claims 10 and 39**, Bouis discloses that including a plurality of memory modules, each memory module in said plurality of memory modules associated with a different ASISP selected from said plurality of ASISPs (column 5, lines 30 – column 6, lines 52 and Fig. 3, 4).

Regarding **claims 11 and 40**, Bouis discloses that the state of said process stored in said output register is stored in a unique segment of said different memory module, the unique segment of said memory module being determined by an identity of said process (column 5, lines 30 – column 6, lines 52 and Fig. 3, 4).

Regarding **claims 12 and 41**, Bouis discloses that the output register is further used to store a process identifier value that provides said identity of said process (column 5, lines 30 – column 6, lines 52 and Fig. 3, 4, 6).

Regarding **claims 13 and 42**, Bouis and Merritt disclose all the limitation, as discussed in claim 1. However, Bouis does not specifically disclose the limitation "communication protocol is selected from the group consisting of IS-95 CDMA, IS-95B CDMA, CDMA TIA IS2000, TIA IS 2000A, wideband CDMA (WCDMA), cdma2000, and ARIB WCDMA". However, Merritt discloses the limitation "communication protocol is selected from the group consisting of IS-95 CDMA, IS-95B CDMA, CDMA TIA IS2000, TIA IS 2000A, wideband CDMA (WCDMA), cdma2000, and ARIB WCDMA" (Fig. 2, 3 and column 4, lines 47 – column 5, lines 65, where teaches a communication system (AT&T network or AT&T communication system (wireless or wireline)) has a plurality of processors (27s in Fig. 2) for executing in a accordance with communication protocol such that CDMA, WCDMA, TDMA etc). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Bouis system as taught by Merritt, provide the motivation to achieve enhancing communication adaptability in communication network.

Regarding **claims 14 and 43**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 13.

Regarding **claim 15**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 13.

Regarding **claim 16**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 13.

Regarding **claim 17**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 13. Furthermore, Bouis discloses that the ASISP is a finger ASISP and said subset of functions comprises a delay lock loop (DLL) and a channel estimation (column 2, lines 26 – 46, Fig. 4, 6, and column 5, lines 54 – column 6, lines 52).

Regarding **claims 19 and 44**, Bouis discloses that each process in said plurality of processes is an echo (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claims 20 and 45**, Bouis discloses that each process in said plurality of processes uniquely corresponds to a different mobile hosted by said wireless communication system and each said process combines a plurality of echoes associated with the corresponding different mobile (Fig. 4, 6 and column 5, lines 54 – column 6, lines 52).

Regarding **claims 22 and 47**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 2. Bouis further discloses that each instruction in said limited purposed instruction set includes an arithmetic logic unit field, a load field, and a load/store field (Fig. 4, 6 and column 5, lines 54 – column 6, lines 52).

Regarding **claim 23**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 2. Bouis further discloses that providing a centralized controller (transcoding controller (410) in Fig. 4) for sending control commands to each said ASISP in said plurality of ASISPs (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6, where teaches the transcoding controller selects and places the modules into the series in an order (instructions) that optimizes conversion

Bouis teaches that the centralized controller schedules the functions calculated by each said ASISP in said plurality of ASISPs in a master/slave relationship, thereby reducing said amount of inter-process overhead between said computing components in said device (column 6, lines 23 – column 7, lines 3, Fig. 4, 6, and column 2, lines 12 – column 3, lines 12, where teaches the transcoding controller compares the path system loads to determine which path will produce the least amount of load on the system and capable of using optimal series of streaming conversion modules concurrently to convert positions of the data stream from source format to destination format).

Regarding **claim 24**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 23.

Regarding **claim 25**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 2. Bouis further discloses that the process state information describes a state of said communication process (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claim 26**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 2. Bouis further discloses that each said ASISP in said plurality of ASISPs receives input from non-scheduling control blocks in said communication architecture in

addition to said scheduling commands from said centralized controller (column 2, lines 12 – column 3, lines 46 and Fig. 4, 6).

Regarding **claim 27**, Bouis and Merritt disclose all the limitation, as discussed in claims 1 and 3. Bouis further discloses that the scheduling scheme is a time-slicing algorithm that allocates computational tasks to each ASISP is said plurality of ASISPs in a time-sliced fashion (column 6, lines 23 – column 7, lines

3, Fig. 4, 6, and column 2, lines 12 – column 3, lines 12).

Allowable Subject Matter

4.   Claims 9, 18, 21, 28-30, 38, and 46 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to disclose "the limited purpose instruction set includes a "wait" instruction for synchronization, and each application specific instruction set processors (ASISP) in said plurality of ASISPs is configured so that when said "wait" instruction is received by said input register, the ASISP does execute a communication protocol function during said predetermined period of time and then automatically returns to an idle state thereby reducing a power consumption of the ASISP during the predetermined period of time, and the ASISP is a combiner ASISP and said subset of functions comprises a frequency error estimation, a finger energy estimation, and a signal-to-interference (SIR) estimation, and each said ASISP in said plurality of ASISPs is capable of executing said subset of said set of functions on a time-scale of about 400 to

about 5,000 times per second" as specified in the claims.

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of

time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than

SIX MONTHS from the mailing date of this final action.

Conclusion

Any response to this action should be mailed to:

> Commissioner of Patents and Trademarks
> Washington, D.C. 20231
> Or P.O. Box 1450
> Alexandria VA 22313

or faxed (703) 308-9051, (for formal communications intended for entry)

Or: (703) 308-6606 (for informal or draft communications, please label

"PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to USPTO Headquarters, Alexandria, VA.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is **(571) 272-7880**. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, **Nay Aung Maung**, can be reached on **(571) 272-7882**. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L
June 23, 2005

John J Lee

NAY MAUNG
SUPERVISORY PATENT EXAMINER